P17 – 263SS12 M. Avsjukevich

Mrs. Castronovo July 12, 2012

**Food Chains**

**Grade Level:** 4-5, self-contained class

**Standards: Describe how food supplies the energy necessary for growth and repair of living organisms LE 5.1c, LE 5.2a**

**Classify organisms as producers, consumers, or decomposers by the role they serve in food chains LE 5.1d,e, LE 6.1 a,b**

**Competence-3c:** Engaging students in learning

**Summary**  
Students review the concepts of food chains and the roles of organisms in a food chain through a simple card-sorting activity. Cards representing organisms of different ecosystems are first sorted by herbivores, carnivores, decomposers, and omnivores, then are reordered to create several food chains. Since all living things use energy to move, reproduce, respond to the environment, and grow, less energy is available to pass on at each link of the food chain.

**Objectives**  
Define and construct a food chain.  
Identify the role of organisms within a food chain.  
Trace the path of energy through a food chain.

**Vocabulary**  
Food chain  
Producer  
Consumer  
Herbivore  
Carnivore   
Omnivore  
Decomposer

Make copies of organism cards for each student. Set out colored pencils, scissors, and glue sticks in an easily accessible area.

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| **Attachment** | **Size** |
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|  |  |
| [food\_chain\_cards.pdf](http://www.mysciencebox.org/files/food_chain_cards.pdf) | 230.04 KB |

**Warm-up:** Begin the lesson with the question: “What did you eat for dinner last night?" Break responses down into individual ingredients (separate lasagna into pasta, beef, tomatoes, and cheese) and write them on the board.

1. Once you have a broad sampling, begin categorizing the ingredients into producers and consumers. Use questions such as:
   * Which of these foods come from plants?
   * Which of these foods don't come from plants? (If mushrooms are on the board, remember that technically mushrooms are fungi not plants!)

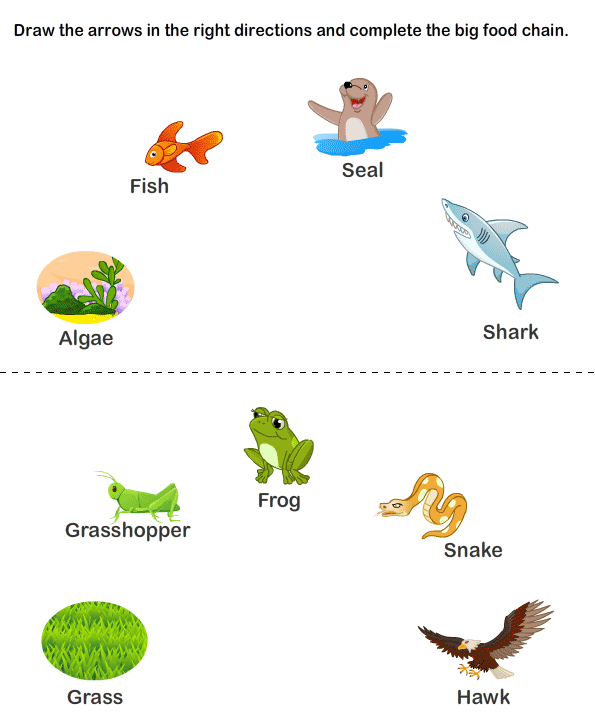
**Direct Instruction:**

At this point, introduce the idea of producers as plants, or more scientifically, as organisms that make their own food through photosynthesis. Introduce the idea of consumers as animals, or more scientifically, as organisms that eat producers or other consumers.

1. Break down the consumer category further into herbivore, carnivore, omnivore, and decomposer. Sort the animal pictures (if available) or ask questions such as:
   * Of the consumers, which are animals that eat plants?
   * Which are animals that eat other animals?
   * Which eat both?
   * Are there any decomposers? (Mushrooms are likely to be the only decomposers.)

Introduce the vocabulary words herbivore, carnivore, omnivore, and decomposer at this point and give the formal definitions. Ask students to describe a food chain. As part of this discussion, try to follow one or more of the foods on the board through the food chain. For example, sun -> grass -> cow -> people. All the food chains we will be dealing with in this class have the sun as the initial energy source.

1. Introduce today's activity. Students should receive a set of organism cards. Their first task is to color code the organisms on their cards by their role in the food chain. Write the color code up on the board: green = producers, yellow = herbivores, red = carnivores, orange = omnivores, blue = decomposers.
2. When students finish color coding, have them begin to organize the cards into food chains. Definitely tell them that there are multiple food chains. When students have identified a complete chain, they can make a mobile or glue the food chains in the notebooks.
3. With 10 minutes before the end of class, have students stop and clean up. Any work they have remaining can be assigned as homework. Envelopes can be used to contain any cut out cards that have not been glued down yet.
4. **Differentiated approach**: students at a lower functioning level may review the basic concepts and play a food-chain game at: <http://www.cookie.com/kids/games/food-chain.html>, followed by an energy transfer assessment sheet below:

**Food Chain Worksheet** 

**Closure:**

Once the students have cleaned up and are settled again, display the food chains they’ve made, discuss the transfer of energy from one level of the food chain to the next, focusing on how any one organism can't transfer the energy it gets from its food directly to the next organism in the food chain because it needs to use some of that energy itself to grow, reproduce, and survive.

**Assessment**

1. Pick an ingredient from your lunch today and construct a food chain. Make sure to start with the sun and include yourself. **Identify the role of each organism** (producer, herbivore, omnivore, etc.).

**RUBRICS**

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| --- | --- | --- | --- | --- |
|  | 4 | 3 | 2 | 1 |
| Student Understanding | • There is evidence that the student has a **full and complete** understanding of the energy transfer through a food chain | • There is evidence that the student has a **general** understanding of the energy transfer through a food chain | • There is evidence that the student has **minimal** understanding of.  the energy transfer through a food chain | • There is evidence that the student has **no** understanding of the energy transfer through a food chain. |
| Student Response | The response reflects a complete synthesis of information | The response reflects some synthesis of information | The response provides little or no synthesis of information | The response is completely incorrect or irrelevant or there is no response. |
| Terminology | The accurate use of scientific terminology strengthens the response. | The accurate use of scientific terminology is present in the response. | The accurate use of scientific terminology may not be present in the response. | The accurate use of scientific terminology may not be present in the response. |
| Application of Knowledge | An effective application of the concept to a practical problem or real-world situation reveals a complete understanding of the concept | An application of the concept to a practical problem or real-world situation reveals a general understanding of the concept | An application, if attempted, is minimal. | An application, if attempted, is minimal. |

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